

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

Instone Air Services

for exemption from §§ 25.855(a), 25.857(e),
25.807(d)(1) and 25.1447(c)(1) of Title 14,
Code of Federal Regulations

Regulatory Docket No. FAA-2002-12352

GRANT OF EXEMPTION

By letter dated May 3, 2002, Mr. Lane Taylor, J2 Technologies, 1634 S. Research Loop Road #170, Tucson, Arizona 85704, petitioned on behalf of Instone Air Services for an exemption from §§ 25.855(a), 25.857(e), 25.807(d)(1) and 25.1447(c)(1) as amended by Amendment 25-72 of Title 14, Code of Federal Regulations (14 CFR). This exemption would allow the carriage of up to 28 non-crewmembers, commonly referred to as supernumeraries, i.e., animal handlers, or grooms, on the main deck of Boeing Model 747-100, -200 series airplanes, to attend to live animal cargo.

The petitioner requests relief from the following regulations:

Section 25.855(a) requires that cargo compartments must meet one of the class requirements of § 25.857.

Section 25.857(e) defines the attributes of a Class E cargo compartment, and requires that a Class E cargo compartment may not be on any airplane other than one utilized exclusively for the carriage of cargo.

Section 25.807(d)(1) requires in pertinent part that the minimum number and type of passenger emergency exits for 20 through 39 passengers is one Type II and one Type III exit on each side of the fuselage.

Section 25.1447(c)(1) requires, in pertinent part, that oxygen masks must be immediately available to each seated occupant, be automatically deployed with manual backup, and must exceed in number the quantity of seats by ten percent, with the extra units distributed evenly throughout the cabin.

Related regulations:

Section 121.583(a) contains a listing of categories of the people who may be carried aboard an airplane in part 121 service without complying with all the passenger-carrying airplane requirements of part 121.

The petitioner supports its request with the following information:

“1. Introduction

“Instone Air Services is a company specializing in providing worldwide services in the transportation of bloodstock – race horses, show horses, etc. The company utilizes aircraft ranging in size from short haul European freighters to the 727, 707, DC-8, DC-10, and 747.

“These animals are very valuable with many worth over one million dollars. The animals cannot be properly insured for air transport unless there are a sufficient number of qualified handlers on board.

“The interest of the petitioner is in providing a level of safety for the animals and aircraft that will allow an expansion of his service to include international events such as the Olympics and other world events which involve a large number of race or show horses.

“The Boeing 747-100, -200 freighters presently have no provisions for supernumerary seating to help in the care of the horses for long haul flights.

“The petition is for an exemption from 14CFR §§ 25.857(e), 25.855, 25.807(d)(1) and 25.1447(c)(1). Note that all exemptions are through amendment level 25-72. The exemption from § 25.857(e) will allow for the accommodation of up to 28 livestock attendants or grooms on the main deck of a Boeing Model 747 freighter in a specially designated area. The exemption from § 25.855 is necessary, as the main deck no longer fits the specific definition of a class E cargo compartment. An exemption from § 25.807(d)(1) is being sought to allow for the use of the two aft doors as emergency exits. The 5L and 5R doors, when reactivated, provide an equivalent level of safety by being oversized (Type A) compared to the two type II and type III exits required by § 25.807(d)(1). The exemption from § 25.2447(c)(1) will mandate an equivalent level of safety for attendants leaving the vicinity of the attendants area by requiring them to carry portable oxygen units. The 28 installed oxygen units plus the 28 walk around oxygen units meet the requirements of § 25.1447(c)(1), which requires the number of oxygen units to exceed the number of seats by at least ten percent. All features of the Class E

cargo compartment required by §§ 25.855 and 25.857 will be retained and all safety requirements of part 25 as defined by the certification basis of the airplane in Type Certificate Data Sheet (TCDS) A20WE will be complied with.

“The FAA approved Aircraft Flight Manual (AFM) will contain a supplement with the operating limitation restricting the carriage of occupants accommodated by the specially modified section of this aircraft to animal handlers who have been designated by the operator as necessary for the safe carriage of live animal cargo, or those who are being trained for such duties. The seats may be similarly occupied during operations in which no cargo at all is being transported, but not to be occupied during operations in which any cargo whatsoever other than live animals is being transported.

“In addition, an FAA approved training plan will be initiated to instruct the animal handlers in the prohibition against smoking, and procedures in equipment use relating to ditching and emergency evacuation.

“Four exemptions from the Federal Aviation Regulations (FAR) are being requested – an exemption from §§ 25.857(e), and 25.855(a) to allow for attendants to be accommodated on the main deck of a Boeing Model 747-100, -200 freighter, an exemption from 25.1447(c)(1) to provide for an equivalent level of safety in the dispensing of oxygen in emergency situations, and an exemption from 25.807(d)(1) to allow for doors 5L and 5R to be reactivated and used as emergency exits. All safety features of part 25 as defined by the certification basis of the airplane in Type Certificate Data Sheet (TCDS) A20WE will be complied with.

“This request for exemption follows those granted to FedEx for STC, ST00453AT.

“2. Exemptions Being Petitioned

“Instone Air Services is requesting an exemption from 14CFR 25.857(e) to allow the carriage of up to 28 livestock handlers on the main deck of a Boeing 747-100, -200 freighter, and an exemption from § 25.1447(c)(1) to allow portable oxygen units to be worn/carried by the animal attendants while they are away from the seat installed oxygen. Furthermore, it is requested that § 25.1447(c)(1) be allowed for an equivalent level of safety that would consider 28 portable oxygen units and 28 seat mounted oxygen units for seated attendants as meeting the requirement that the number of oxygen masks exceed the number of seats by ten percent.

“By extension, exemption from § 25.855(a) is also requested, as this FAR requires any cargo compartment to comply with a designated classification of § 25.857.

"An additional exemption is being sought from § 25.807(d)(1) to allow the two aft exits (door 5L and 5R) to be considered an equivalent level of safety.

“3. Petitioner Interest

“Instone Air Services is a company specializing in providing a worldwide service for the transport of live animals, and particularly, the transport of bloodstock – race horses, show horses, etc.

“These animals are very valuable and many are worth over a million dollars. The animals cannot be insured for air transport unless there is a sufficient number of qualified handlers on board.

“The interest of the petitioner is in providing a level of safety for the animals and the aircraft that will allow an expansion of his service to include international events such as the Olympics and other world events which involve large numbers of race horses and show horses.

“4. Justification for Request

“4.1 Rationale

“Horses are usually transported in shipping containers that can carry as many as three horses each. The containers are designed to fit into the existing pallet positions of the Boeing 747 freighter, and depending on the configuration, could have up to 28 pallets. A typical load could be up to 84 horses on the main deck of a Boeing 747-100/200 and the number of qualified grooms is commensurate with the value and safety of the horses on board.

“For safety reasons, the International Air Transport Association (IATA) recommends that for up to four pallets, one experienced groom be provided for each pallet of horses. For more than four pallets of horses, it is at the discretion of the carrier and the shipper to determine the optimum requirement.

“The safe transport of large numbers of horses by air therefore requires the carriage of a commensurate number of qualified handlers on the main deck.

“The FedEx STC allows for the transport of up to 24 handlers on the main deck.

“4.2 Public Interest

“The carriage of an appropriate number of animal handlers aboard an aircraft to monitor and to attend to the special requirements of live animal cargo, especially race horses and show horses, serves the public interest in raising the level of safety of the livestock, the airplane, the flightcrew, and consequently, the public in general.

“Designing the animal handlers station to meet the certification basis requirements as well as the more recent safety requirements of 14 CFR part 25 raises the safety level of the animal handlers to that intended for passengers.

“This exemption, therefore, serves the public interest for safety reasons and also for increased air freight deliveries of these animals internationally.

“4.3 Safety

“Safety is the primary concern of the modification. As stated earlier, all safety requirements of the original type certification of the aircraft will be complied with, as defined by the aircraft type certificate data sheet (ATDS) A20WE. Any adverse effects of the exemption and the equivalent level of safety of the modification are discussed below.

“4.4 Adverse Effects

“The exemption is to allow for the carriage of livestock attendants on the main deck of a Boeing 747 freighter. Because of the level of safety provided by 14 CFR part 25, and the restrictions placed on the carriage of attendants as specified in the FAA approved AFM supplement, there are no apparent adverse effects.

“4.5 Equivalent Level of Safety

“The modification will be designed to incorporate certain features that will ensure the animal attendants enjoy a level of safety equivalent to that enjoyed by passengers, as provided by the original certification basis of the aircraft, and the updated part 25 regulations.

“4.5.1 Animal Attendant Seats

“The animal attendant seats will be fully certified to the applicable TSO, to the maximum load factors of the aircraft at the FS position of the seats, and for the emergency landing provisions of the original certification basis for the aircraft, FAR 25.

“4.5.2 Emergency Equipment

“In providing for a compensating level of safety for the main deck occupants, a fire extinguisher, first aid kit and any other required equipment will be provided.

“4.5.3. Emergency Egress § 25.810

“1. Doors 5R and 5L will be reactivated to serve as emergency exits.

“2. Approved and certified slides will be installed at the doors to provide emergency egress from the aircraft.

“3. Flotation for the occupants will be provided by the slides, or by rafts.

“4.5.4. Supplemental Oxygen

“Section 25.1447(c)(1) states that oxygen must be automatically presented and immediately available to the occupants, and the quantity of masks must exceed the number of seats by ten percent. We are seeking an exemption from the requirement of the oxygen being automatically presented. However, we would like it considered to be an equivalent level of safety due to the automatically activated decompression signal, the availability of oxygen as described below, and required training and familiarization.

“4.5.4.1 Seated Occupants

“It is the plan of the Supplemental Type Certificate to provide the seated occupants with self contained oxygen bottles with protective breathing masks under each seat. The attendants will be trained in the use of these oxygen units.

“4.5.4.2 Working Grooms

“Each groom will be provided with a portable oxygen source with protective breathing masks that will be carried whenever the groom is not in the vicinity of the seats.

“Note: it is considered that the portable oxygen units, plus the fixed oxygen sources meet the requirement of 25.1447(c)(1) that the quantity of masks exceed the number of seats by at least ten percent.

“4.5.4.3 Decompression Signal

“An automatically activated decompression signal immediately recognizable throughout the cabin area will be provided to automatically notify supernumeraries when to don oxygen.

“4.5.5 Emergency Lighting System

“An emergency lighting system will be provided for the following items:

- “1. Emergency lighting illumination of the seating area, passageways, door signs, instructions, etc. will be provided.
- “2. Exit identifier signs.
- “3. Floor proximity lighting.

“4.5.6. Lighted Fasten Seat Belt Signs, § 25.791

“Flight crew activated lighted “Fasten Seat Belt” signs will be provided that are visible while seated.

"4.5.7. Lighted Return to Seat Signs

“Flightcrew activated “Return to Seat” signs will be provided along the length of the aircraft.

"4.5.8. Flight Deck Communications, § 25.1423

“A standard aircraft intercom/public address (PA) system will be installed. The PA system will be audible from anywhere within the aircraft and will be activated from either the flight deck, or from the supernumerary seating area. The PA/Intercom system will have a battery for emergency use, per 25.1423(a)

"4.5.9. Flight Phone

“Two way communication from the supernumerary seating area to the flight deck will be provided by means of a flight phone installed within reach of attendants at the seats.

"4.5.10 Placards

"The following placards will be provided:

- “1. No Smoking Signs
- “2. Door Operating Instructions
- “3. Slide Operating Instructions
- “4. "Raft Operating Instructions
- “5. "External Door Exit Markings

"4.6. AFM Supplement

“The FAA approved Aircraft Flight Manual will be supplemented to contain operating limitations restricting the carriage of occupants to animal handlers under specified conditions, as well as the training required for animal handlers using this STC.

- “1. The AFM supplement will limit the seats to being occupied by animal handlers only. They may be similarly occupied during operations in which cargo is not being carried, but not during operations in which cargo, other than live animals, is being carried.

“2. The AFM supplement will have a prorated scale for the number of handlers based on less than full utilization of the aircraft to carry livestock.

“4.7. FAA Approved Training Plan

“An FAA approved training plan to instruct the animal handlers in the prohibition against smoking, procedures, and equipment use relating to ditching and emergency evacuation.”

A summary of the petition was published in the Federal Register on July 23, 2002 (67 FR 48247). No comments were received.

The FAA's analysis/summary is as follows:

In considering Instone Air Services' petition to provide for the accommodation of up to twenty-eight supernumeraries in a cargo compartment, which was initially a Class E compartment (as defined in §§ 25.855 and 25.857), the primary concern is in addressing any potentially adverse impact of permitting these occupants within what is intended by part 25 to be an all-cargo compartment.

Instone Air Services' petition is considered with reference to the passenger safety criteria of part 25, but with due consideration traditionally given to the special status of “persons,” beyond that of passengers, by virtue of certain knowledge and abilities attributed to them through certain training and the imposition of special equipment requirements. The petitioner's request is noted to allow remotely located supernumerary seating at the aft portion of the main cabin, without benefit of immediately available flightcrew or flight attendants, and irrespective of existing noted exemptions which allow other supernumerary seating immediately behind the cockpit on the upper deck. The petition is also understood to address only the intended operations described, i.e., the carriage of supernumeraries to attend to live animals. Any contemplated operations that include the carriage of any non-live-animal cargo, either exclusively or in combination with live animals, is beyond the scope of this evaluation, and must be considered separately.

In noting obvious differences between cabin configurations envisioned by part 25 and that proposed by the petitioner, as well as between the normal activities associated with passengers as compared with supernumeraries, the FAA is concerned with assuring that the supernumeraries would be as safely provided with supplemental oxygen as would be passengers. To that end, comparison is made of the likely response of normally seated passengers observing the automatic presentation of masks throughout the cabin, with that of possibly working supernumeraries who may or may not even notice a “decompression signal.” However, requiring supernumeraries who leave the vicinity of the pallet-installed seats to carry portable oxygen generator devices in addition to the automatically activated aural and visual decompression signal is considered to provide an acceptable equivalency to the readily available, automatically presented, and uniformly distributed

requirement of § 25.1447(c)(1), and these portable oxygen devices are shown to be equivalent to those normally installed and approved in passenger service units (PSU).

As a part of assuring a compensating level of safety for the main deck occupants, nominal fire extinguisher and protective breathing equipment should be provided in accordance with the intent of §§ 25.851(a)(3) & (4) and 25.1439, respectively. In this particular regard, the main deck cargo compartment shall be considered a Class E cargo compartment, a lower-lobe galley, or an isolated compartment, whichever requires the most conservative quantity and location of this equipment.

The petitioner has indicated the intention to retain all required attributes of a Class E cargo compartment, as addressed in §§ 25.855 and 25.857(e), with the single exception of allowing occupants to be accommodated in this cargo compartment. Given that the petitioner did not propose the inclusion of any additional equipment associated with fire fighting (i.e., fire extinguishers and protective breathing equipment (PBE)), or address this subject in any manner, the FAA interprets this omission as the intent on the part of the operator to retain the means required by § 25.857(e)(3) to control a Class E cargo compartment fire, i.e., decompression of the airplane. Accordingly, this grant is conditioned on the retention of these procedures, and on the installation of required occupant supplemental oxygen equipment that is sized adequately for continuous and uninterrupted use, in accordance with § 25.1441, during worst-case flight durations under these conditions.

In conclusion, the FAA has determined that the existing regulations for type certification do not address occupants that are neither crew nor passengers, and an exemption is warranted to permit carriage of these supernumerary individuals.

The Grant of Exemption

In consideration of the foregoing, I find that a grant of exemption is in the public interest and will not affect the level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 and 44701, delegated to me by the Administrator, Instone Air Services is hereby granted an exemption from 14 CFR 25.855(a), 25.807(d)(1), 25.857(e), and 25.1447(c) as amended by Amendment 25-72. The petition is granted to the extent required to permit type certification of the Boeing Model 747-100, -200 airplanes, with provisions for the carriage of supernumeraries. The following requirements apply:

1. Occupants are limited to the categories specified in § 121.583(a)(4)(ii) and (5).
2. Each occupant must be briefed by a flight crewmember on the use of the exits and emergency equipment prior to each flight.
3. The operator must determine that each occupant is physically able to accomplish the necessary emergency procedures.

4. Emergency Equipment:

In providing for a compensating level of safety for the main deck occupants, fire extinguishers, first aid kit and any other required equipment must be provided in accordance with the relevant provisions of 14 CFR part 25. For emergency egress assistance, an axe must be provided to assist in the case of a jammed or stuck exit door as required by § 121.309(e).

5. Emergency Egress must be provided in accordance with § 25.810 with the following additions:

- a. Doors 5R and 5L must be reactivated to serve as emergency exits.
- b. Approved and certified slides must be installed at all emergency exit doors to provide emergency egress from the aircraft.
- c. Flotation for the occupants must be provided by the slides, or by rafts.

6. Seated Occupants:

The Supplemental Type Certificate must provide the seated supernumeraries with self contained oxygen bottles with protective breathing masks under each seat. The supernumeraries must be trained in the use of these oxygen units; reference § 25.1441.

7. Supernumeraries Emergency Oxygen:

Each supernumerary must be provided with a portable oxygen source with protective breathing masks that must be carried whenever the supernumerary is not in the vicinity of the seats. The portable oxygen units may be located in a common area.

In addition to the portable oxygen units, there must be a fixed oxygen source available at each supernumerary seat.

8. Decompression Signal:

In lieu of the requirement of § 25.1447(c)(1) for automatic presentation of the oxygen dispensing units, an automatically activated aural and visual decompression signal immediately recognizable throughout the cabin area must be provided to notify supernumeraries when to don oxygen.

9. Emergency Lighting System:

An emergency lighting system designed to meet the requirements of § 25.812 must be provided and must include, but not limited, to the following:

- a. Emergency lighting illumination of the seating area, passageways, door signs, instructions, etc., must be provided.
- b. Exit identifier signs.
- c. Floor proximity lighting.

10. Lighted Fasten Seat Belt Signs, § 25.791:

Flightcrew activated lighted “Fasten Seat Belt” signs must be provided that are visible while seated.

11. Lighted Return to Seat Signs:

Flightcrew activated “Return to Seat” signs must be provided along the length of the aircraft.

12. Flight Deck Communications, § 25.1423:

A standard aircraft intercom/public address (PA) system must be installed. The PA system must be audible from anywhere within the aircraft and must be activated from either the flightdeck, or from the supernumerary seating area.

13. Flight Phone, § 121.319:

Two way communication from the supernumerary seating area to the flightdeck must be provided by means of a flight phone installed within reach of at least one of the seated supernumeraries.

14. Placards:

The following signs and placards must be provided:

- a. No Smoking Signs
- b. Door Operating Instructions
- c. Slide Operating Instructions
- d. Raft Operating Instructions

e. External Door Exit Markings

15. Airplane Flight Manual (AFM) Supplement:

The FAA approved AFM must be supplemented to contain operating limitations restricting the carriage of occupants to supernumeraries under specified conditions, as well as the training required for supernumeraries.

- a. The AFM supplement must limit the seats to being occupied by supernumeraries only. They may be similarly occupied during operations in which cargo is not being carried, but not during operations in which cargo, other than live animals, is being carried.
- b. The AFM supplement must have a prorated scale for the number of supernumeraries based on less than full utilization of the aircraft to carry livestock.

16. FAA Approved Training Plan:

An FAA approved training plan to instruct the supernumeraries in the prohibition against smoking, procedures, and equipment use relating to ditching and emergency evacuation must be developed and provided to each operator.

This exemption will remain in effect unless superseded or rescinded.

Issued in Renton, Washington, on October 1, 2002.

/s/ Ali Bahrami

Ali Bahrami
Acting Manager
Transport Airplane Directorate
Aircraft Certification Service